

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 July 2005 (28.07.2005)

PCT

(10) International Publication Number
WO 2005/068104 A1

(51) International Patent Classification⁷: **B21D 43/05,**
43/10

JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP).

(21) International Application Number:
PCT/JP2004/019824

(74) Agent: **OHKAWA, Hiroshi**; 2-5, Meieki 3-chome, Nakamura-ku, Nagoya-shi, Aichi, 4500002 (JP).

(22) International Filing Date:
27 December 2004 (27.12.2004)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2004-009526 16 January 2004 (16.01.2004) JP

(71) Applicant (for all designated States except US): **TOYOTA JIDOSHA KABUSHIKI KAISHA** [JP/JP]; 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

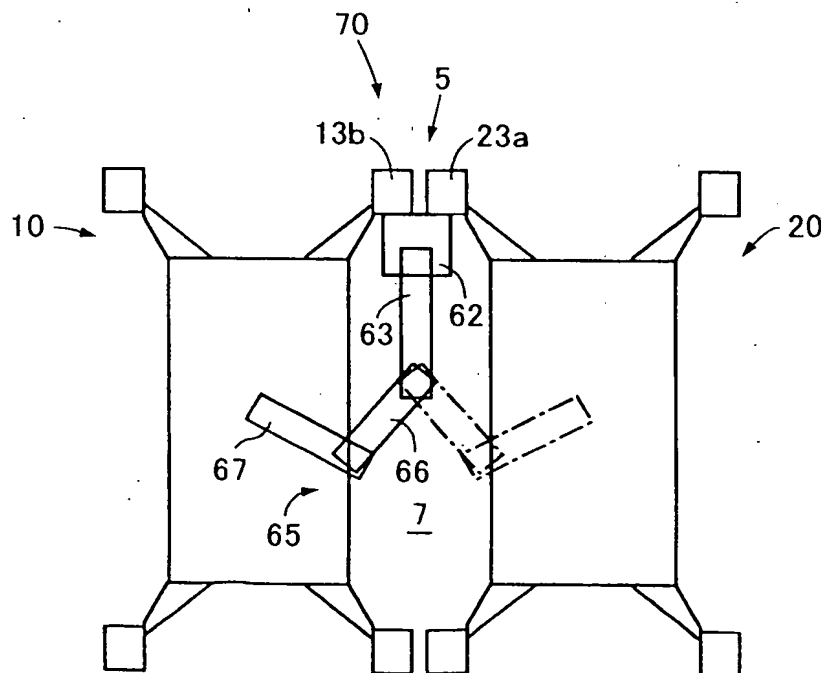
(75) Inventors/Applicants (for US only): **KATO, Shinji** [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). **NAKAMURA, Hisanori** [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). **HASEBE, Asahiko** [JP/JP]; c/o TOYOTA

Published:

— with international search report

[Continued on next page]

(54) Title: TANDEM PRESS APPARATUS



(57) Abstract: The present invention provides a tandem pressing apparatus which can shorten the conveying distance and the conveying time without increasing conveying speed of the work. A tandem pressing apparatus of the present invention is comprised of a tandem pressing line constructed by plural tandem presses 10 and 20 disposed side by side, and a work conveying apparatus 70 including a main member and an arm portion. Each of the tandem press includes a bed, 11, plural uprights 13a to 13d studded on the bed, and a slide 15 supported on the uprights to be ascended or descended. The main member 62 and 63 is provided at a portion located inside the uprights of the adjacent two tandem presses constructing the tandem pressing line and does not interfere with the slide. The arm member 65 held on the main member to transfer the work having been pressed by the upstream tandem press to the downstream tandem press.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.